REMARKS:

Claims 1-12 and 16

Claims 1-12 and 16 have been rejected under 35 USC 103(a) as being unpatentable over Pinarbasi '492 (US6208492) alone or in combination with either Pinarbasi '299 (US6317299) or Huai et al. (US6381105).

Claim 1 has been amended to further require the processing steps of forming a spacer layer above the free layer, and forming a bias layer above the spacer layer. These limitations have been taken from claim 16. None of the references disclose the processing steps of: forming a PtMn layer using ion beam deposition, forming an antiparallel (AP) pinned layer structure above the PtMn layer, forming a free layer above the AP pinned layer structure, forming a spacer layer above the free layer, and forming a bias layer above the spacer layer. Accordingly, the combination of references taken together does not render claim 1, particularly as amended, obvious.

Claim 1 has been further amended to require that at least one of the free layer and the AP pinned layer structure have been formed by a process other than ion beam deposition. As noted in the rejection, Pinarbasi '492 indicates that all of his layers are formed by ion beam deposition. No mention of other fabrication processes was found in Pinarbasi '492, nor in Pinarbasi '299. Only Huai indicates that other processes may be used. However, in order to modify Pinarbasi '492 to include alternate processing types as in Huai, there must be some motivation or suggestion in the references to do so.

The analysis of obviousness was set forth in *Graham v. John Deere*, 383 U.S. 1, 148 USPQ 459 (1966). In order to establish a *prima facie* case of obviousness, three basic criteria must be met:

> First, there must be some *suggestion or motivation*, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the teachings of the references. Second, there must be a *reasonable expectation of success*. Finally, the prior art reference or combined references must teach or suggest *all the claim limitations*. *The teaching*

> *or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art*, and not based on applicant's disclosure (*In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991; emphasis added).

In the instant case, none of the references suggest or provide a motivation to modify Pinarbasi '492 to include alternate processing steps. Although a prior art device "may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so." 916 F.2d at 682, 16 USPQ2d at 1432.). Pinarbasi '492 is devoid of any reference to processing steps other than ion beam sputter deposition, which apparently gave good results in all four of Pinarbasi '492's examples. Accordingly, Pinarbasi '492 does not suggest using any other type of processing. Likewise, Pinarbasi '299 is devoid of any reference to processing steps other than ion beam sputter deposition. Huai generically indicates that various processes can be used to form some layers, but does not suggest that one is more preferable than the other. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). In the instant case, the prior art does not suggest the desirability of the combination.

In fact, using other processes to create Pinarbasi '492's structure would likely defeat the purpose of Pinarbasi 492's invention, that of using the bilayer seed layer to improve the magnetoresistive coefficient (dr/R). It is well known that the seed layer structure is critical in defining how the layers thereabove are formed. Pinarbasi only discloses ion beam sputter deposition as an acceptable mode of fabrication. Using any other fabrication process would change the way the seed layers define the overlying sensor, perhaps to its detriment. If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

Further, using any other fabrication process could render Pinarbasi '492's structure unsatisfactory for its intended purpose. If proposed modification would render

the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

For any of the above reasons, the rejection of claims 1-12 is believed to be improper. Reconsideration and allowance of claims 1-12 is respectfully requested.

Claim 16 contains limitations similar to that of claim 1, and is therefore believed to be allowable over the combination of references for the same reasons.

In the event a telephone conversation would expedite the prosecution of this application, the Examiner may reach the undersigned at (408) 971-2573. For payment of any additional fees due in connection with the filing of this paper, the Commissioner is authorized to charge such fees to Deposit Account No. 50-2587 (Order No. HSJ920030150US1).

Respectfully submitted,

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